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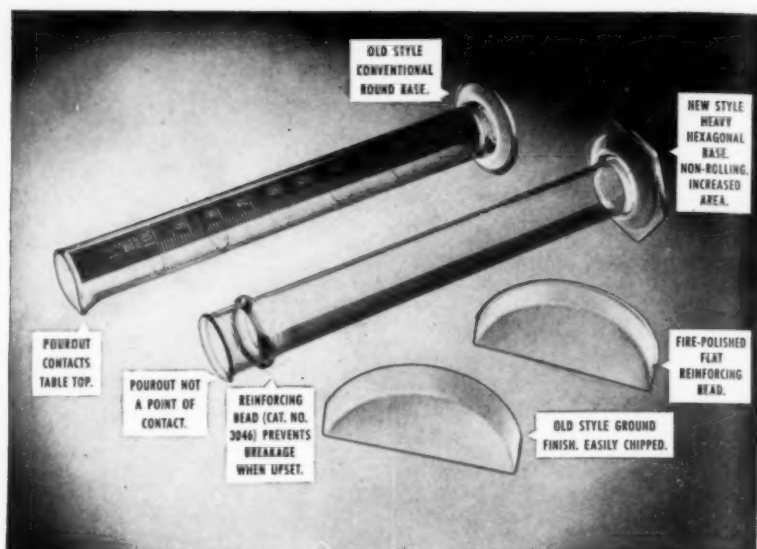
THE *Chemist*

NOVEMBER, 1945



VOLUME XXII, No. 11

Keep Up Our Scientific Insurance	613
Research Expansion Programs	614
Agenda of President's Committee on Patents	615
Industry's Debt to Chemical Education	627
The Chemical Industry an Integral Part of the Economic Fabric of our Nation	631
Chain, Karat, and Stone	633
Council	637
Chapters	640
Chemical Condensates	649
Meeting Dates	650
Advertising Index	651



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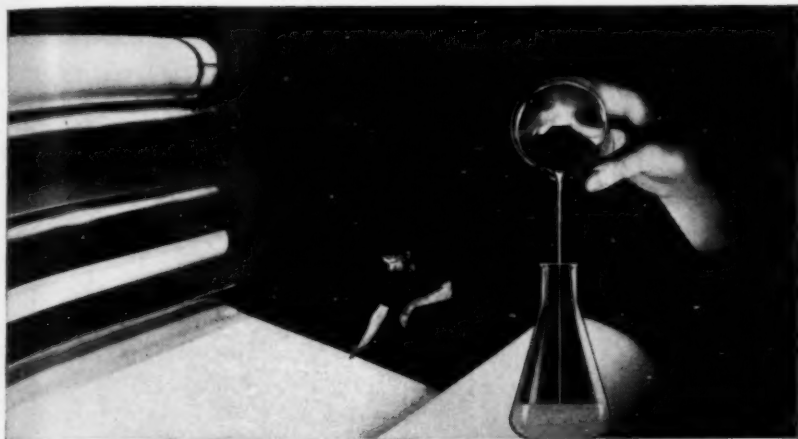
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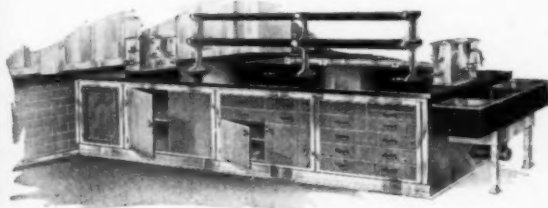
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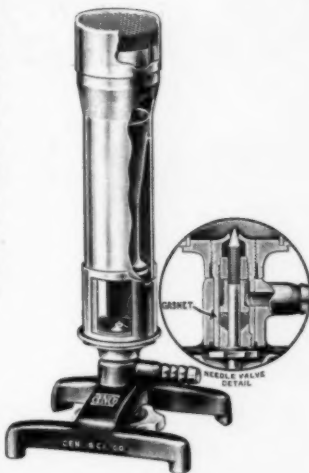
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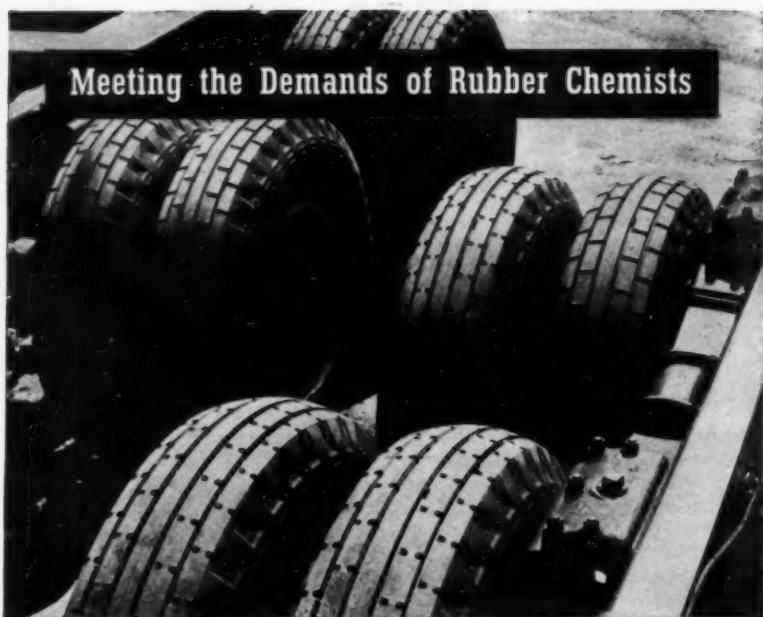
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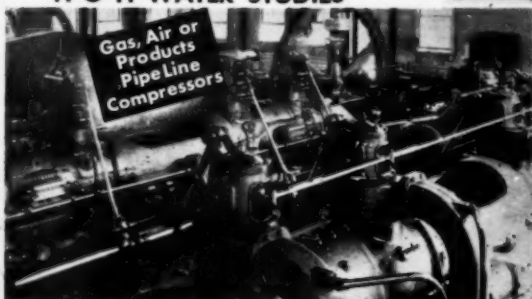
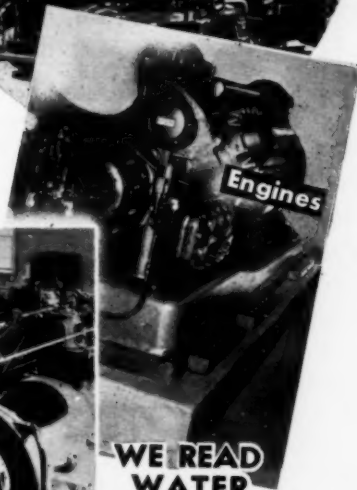


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Yes, the mere mention of the word startled most manufacturers before the war — and it still remains in the dictionary and in the minds of many buyers for future use. Far-thinking planners are investigating sources of supply of domestic materials that will be available in sufficient quantities to meet their manufacturing schedules and priced to fit their cost sheets.

Wartime experience in the use of Red Oil, Oleic and other fatty acids as replace-

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Keep up Our Scientific Insurance

THE original purpose of the National Roster of Scientific and Specialized Personnel was to establish an inventory of scientific people and to make this available to the war effort. The records of some 400,000 professional people were obtained, of whom some 85,000 are chemists and chemical engineers. From this pool of scientific manpower, over 170,000 were referred for commissions and technical ratings in the Army and Navy and to positions in the Government and in war industries. Some 50,000 registrants were placed with these important services, including the atomic bomb project. Translated into dollars, this represents over \$150,000,000 worth of employment per year.

With the end of the war, the Roster is faced with the equally great task of returning these scientists to private industry. In addition to assisting civilians who were in war industries or government research to locate new positions, veterans returning from the services are referred to the Roster as they pass through separation centers. There they are informed of available scientific open-

ings in industry, and may fill out application blanks immediately.

A third function of the Roster, apart from registration and placement, is to provide occupational information, statistical material, and educational surveys of the scientific fields. It has already done much work along these lines, and recently issued occupational surveys of the chemical and chemical engineering fields, based on the wealth of information which it has acquired in the past few years.

These functions of the Roster which serve to provide facts for the scientific profession; to give guidance to the educational institutions; to publish occupational information; to register and maintain an inventory of scientific manpower, and to offer specialized placement in industry to this scientific manpower, are invaluable to the Nation.

The Roster, in this period of government reconversion, is in grave danger of being considered solely as a war project and consequently of being discontinued. If the Roster becomes a casualty, we will lose valuable records and experience which

may continue to serve as insurance in times of national emergency, as well as an agency which is continually useful. We must keep up this scientific insurance.

Two possibilities for the future of the Roster are open. It may be set up as a Bureau within some Government agency, or it may become an independent foundation supported by all the professions. If the first is not feasible, every scientific professional organization should plan to take united action to establish the Roster as an independent foundation. The National Roster and its invaluable accumulation of facts about scientists, and its present and potential service to our national defense and scientific future must be maintained. What shall we do about it?

Research Expansion Programs

A. E. Staley Manufacturing Co.

A \$250,000 laboratory for research in corn and soy bean potentials is now nearing completion; as also is the company's \$2,000,000 oil extraction mill at Decatur, Illinois.

General Electric Company: Dr.

Zay Jeffries, vice president and general manager in charge of the Chemical Department, announced that a new division, the Chemical Engineering Division, was established on October first.

Hercules Powder Company:

R. F. Schlaantine, director of operations of the Synthetics Department announces that a new plant for the production of alkyd resins and other facilities will be erected at the Hercules Company's Mansfield, Massachusetts, plant. There are now openings in the Mansfield plant for twenty additional chemical operators.

Sterling Drug, Inc.: James Hill,

Jr., president, announces that a new aspirin manufacturing plant will be constructed at Trenton, N. J., inaugurating the company's \$6,000,000 building program. The new structure represents the first of seven projects to expand the laboratory and manufacturing facilities. The structure is expected to be completed in about ten months.

Jefferson Chemical Company

H. L. Derby, president, announces that a large chemical plant will be erected at Port Neches, Texas, for the production of intermediate chemicals used in the manufacture of synthetic rubber, plastics, textiles, and other materials from petroleum. The Jefferson Company is owned jointly by American Cyanamid Company and Texas Company.



A. Edgar Kroll, F.A.I.C., has been awarded the Gotshall Scholarship and is doing graduate work at Lehigh University.

Agenda of President's Committee on Patents

WILLIAM H. DAVIS, Director of Economic Stabilization, on August 6, 1945 made public an Agenda listing the topics under study by the staff of the President's Committee on the Patent System.

The committee was created by Henry A. Wallace, Secretary of Commerce, in response to President Truman's direction, to make a study of the operation and effectiveness of the patent laws and their relation to the purposes of the anti-trust laws and to the post-war economy. Mr. Davis is chairman; the other members of the committee are Tom C. Clark, Attorney General; Vannevar Bush, director of the Office of Scientific Research and Development, and Charles F. Kettering, Chairman of the National Patent Planning Commission.

In releasing the Agenda, Mr. Davis emphasized that the committee has formed no opinion on any of the topics listed for consideration. He said that these topics have been listed merely for the guidance of the committee's staff, which is under the direction of W. Houston Kenyon, Jr., of the War Department. He added that

it may be necessary later to list additional topics for study, and that the committee will not decide whether to make a recommendation on the particular projects listed until the staff reports have been received.

Mr. Davis explained that the Agenda was being made public at this time in order that interested persons, including manufacturers, inventors, and patent lawyers, will have an opportunity to express their views upon the subjects that the committee's staff is examining, and he urged that these persons communicate their views in writing to the Secretary of Commerce upon any of the questions in which they are interested.

Summarizing the Agenda, Mr. Davis said that the subjects for consideration fall into four groups:

1. What action should be taken to prevent the issue of patents that are not for true inventions.
2. What action should be taken to make patent protection for true inventions more simple and effective.
3. What action should be taken to prevent the abuse of patent rights.
4. A re-examination of the scope

of the patent system in the light of the constitutional objective to promote the progress of science and useful arts.

The committee's Agenda lists, under the above heads, a series of twenty-eight topics for consideration. Included are the question whether Congress should attempt to define what is an invention, means of simplifying and improving the action of the Patent Office, making patent litigation simpler and faster, defining the types of patent abuse and providing specific remedies, and questions relating to the broadening or narrowing of patent protection as may be de-

sirable in the light of modern industrial conditions.

Mr. Davis pointed out that the committee seeks the assistance of the public in considering the problems under study. Anyone having an interest in the subject of the committee's work may obtain a copy of the Agenda from the Information Division, Department of Commerce. Written comment on any of the topics listed, if sent promptly to the Secretary of Commerce, Attention: Mr. W. Houston Kenyon Jr., Washington 25, D. C. will be given full consideration by the committee's staff.

(A reprint of the Agenda follows:)

Department of Commerce

The Patent Survey Committee

Agenda for Working Staff

The purpose of this Agenda is solely to frame the questions relating to the patent system which have thus far been suggested for consideration by the Committee's staff. Inclusion of a question does not imply that the Committee's report will deal with it. Failure to include a question does not imply that the Committee has determined not to consider it.

The questions thus far suggested are set forth below in the form of a series of projects for study. Each project is stated in the form of a question, and most of these questions are accompanied by an explanatory note

suggesting some of the matters to be considered in connection therewith.

The procedure to be followed contemplates the assignment of individual projects to a qualified person or group who will prepare a full and objective report consisting of a factual statement and an appropriate recommendation for action to be taken. Those who are assigned to prepare these reports are advised that no limitation is intended to be placed upon their recommendations by the form of the questions or by the matters listed for consideration in connection therewith. The recommendations,

AGENDA OF PRESIDENT'S COMMITTEE ON PATENTS

however, are to be framed in the light of their effectiveness to achieve the following major objectives:

A. The patent system should, to the greatest possible extent, afford an accessible and comprehensive public register of science as applied to useful arts.

B. The patent system should, to the greatest possible extent, open the door of opportunity for the introductions of inventions into public use, to the end that effective protection is afforded to the true (but not the spurious) inventor, and to the investor who backs a true inventor, during the life of the patent and no longer.

C. The patent system should not authorize practices in the use of patents which depart from the policy of free competition unless the progress of science and useful arts is promoted thereby to such an extent that the departure is justified in the over-all public interest.

Sec. I

Problems relating to patents for spurious or doubtful inventions.

PP 101 Should Congress enact legislation defining the act of invention or enumerating specific factors to be taken into consideration in applying the standard?

Matters to be considered include: (a) whether and to what extent there can be framed a legislative definition of invention, which will be applicable to

all classes of invention, or separate definitions for different classes of invention or for certain classes only (b) whether and to what extent legislation can set forth *positive* factors to be taken into consideration in determining invention (for example, recognition of the need or problem, and unsuccessful efforts to find a solution, by others than the alleged inventor and those associated with him); (c) whether and to what extent legislation can set forth *negative* factors to be taken into consideration in determining invention (for example, identical solutions suggested approximately contemporaneously by others than the alleged inventor and those associated with him, absence of appreciable time-lag between perception of the need and suggestion of the solution, etc.); and (d) whether the standard of invention should be raised or lowered by such legislative action. In connection with the foregoing a detailed study should be made (e) of the opinions of the Supreme Court rendered since 1930 in patent infringement cases (together with appropriate examination of the records of such cases) with a view to determining what standard of invention is now being applied by that court and in what terms it has been defined,

and (f) of leading decisions of circuit courts of appeals interpreting and applying that standard.

PP 102. What, if any, steps should be taken to make the patent system better adapted to serve its constitutional purpose in respect to the output of organized research teams, to the end that (1) the making of true inventions by such teams will be encouraged, (2) there will be diminished pressure for the issue of patents covering merely the results of systematic applications by such teams of engineering knowledge or practical skill to special problems and (3) public disclosure of the latter will be encouraged otherwise than by the grant of patents for the usual term or possessed of all the usual exclusive rights?

Matters to be considered include: (a) the extent to which organised group research tends to be confined to the mere application of existing engineering knowledge to special problems and the extent to which it produces true inventions; (b) creation of a system whereby routine technology may be the subject of a class of subordinate patents which are reduced in term or convey only the right to compensatory relief; and (c) means to induce disclosure of routine technology without patenting,

for example, by providing for the recordation of technology for defensive purposes only, or providing that abandoned applications shall be published and when so published will have an effective date for their disclosure from the date of filing.

PP 103 What steps should be taken to reduce the tendency of the Patent Office to issue patents for non-patentable subject-matter?

Matters to be considered fall in three categories as follows: *More accessible prior art.* Matters to be considered include: (a) improvement and expansion of library facilities in the Patent Office; (b) necessary expansion in the classification corps and the scheme of classification; (c) integration of foreign and published art in the classification system; (d) provision whereby classification is established with emphasis upon disclosure and not claims and (c) provision whereby classified matter is made available to the public without the need of consulting an examiner.

More effective examination. Matters to be considered include: (a) use of officially appointed experts outside the Patent Office (b) necessary expansion in the examining corps; (c) better pay and promotion facilities for

AGENDA OF PRESIDENT'S COMMITTEE ON PATENTS

examiners; (d) rearrangement of examining procedure so that the functions of search and decision are separated; (e) establishment of strict procedures to govern all interviews with the examiner; (f) relieving the examiner of the duty of preparing an examiner's statement when his rejection is appealed; (g) designation of Patent Office Counsel to defend the examiner's position on appeal; (h) making allowed applications open to public inspection for opposition or the submission of additional prior art; and (i) means to assure that the standard of patentability applied by the Patent Office will be coordinated with that applied by the courts or required by the statutes.

More responsible prosecution.

Matters to be considered include: (a) means to assure that legal practitioners before the Patent Office will be under obligations of professional qualifications, and of professional duty to their clients, the tribunal and the public, which are not less rigorous than those now imposed upon legal practitioners in the courts of the several states; (b) formulation of a canon of ethics suited to Patent Office practice; (c) creation of administrative machinery to act upon griev-

ances; (d) expansion of the Commissioner's statutory powers in matters of grievance; and (e) provision of additional sanctions, such as criminal penalties and total or partial invalidation of patents, where necessary.

PP 104. What steps should be taken to rid the register of patents already issued which cover non-patentable subject-matter?

Matters to be considered include: (a) giving a federal court power, where a patent is in issue in any kind of litigation, to order that claims found invalid shall be cancelled; (b) authorizing the Government to intervene in patent litigation for the purpose of showing that the claims in suit are invalid or of narrower scope than asserted; (c) authorizing the Government to bring action against a patent owner to secure a decree cancelling a patent or claim thereof for invalidity; (d) authorizing any person who contemplates a certain line of manufacture to bring an action against a patent owner for cancellation or interpretation of a patent or a claim thereof relating to such manufacture; and (e) provision for maintenance fees to be paid in later years to keep older patents alive.

PP 105. Should changes be made

in the facilities available for amending an issued patent?

Matters to be considered include: (a) whether the right of reissue, now limited to "inadvertence, accident or mistake", should be restricted or extended in that respect; (b) whether reissue applications should be removed from secrecy; (c) whether a separate examining division should be created within the Patent Office for the examination or review of reissue applications; (d) whether broadening reissues should be forbidden; (e) if broadening reissues are permitted the extent to which it is feasible to codify the nature and scope of intervening rights; and (f) the relation of the disclaimer and reissue statutes.

Sec. II

Problems relating to the more efficient working of the patent system within its proper sphere.

PP 201 What steps should be taken to simplify the preparation of a patent application:

Matters to be considered include: (a) single signature; (b) nonrepetition of oaths to previously sworn subject-matter; (c) simplification of oath requirements in cases of joint inventorship; (d) permission to an assignee to file divisional and reissue applications; (e) ways and

means of requiring the specification to be free of irrelevant or unnecessary background matter, fully descriptive of the inventive feature in its preferred embodiment, and free of speculative, alternative and expansionist phraseology; and (f) ways and means of compelling applicants to rely upon a limited number of specific claims plus the doctrine of equivalents instead of a series of graduated claims ranging in scope from specific to speculative.

PP 202. What steps should be taken to simplify and speed the issue of patents?

Matters to be considered include: (a) removal of contested interference proceedings from the Patent Office, with immediate issuance of a patent to one applicant and limitation of a subsequently issued patent for the same invention to the term of the first patent; (b) removal of the defense of double patenting when division results from a requirement of the Patent Office (with abolition of appeals on issues of division and shortening of the time for filing a required division); (c) confining ex parte appeals from the Patent Office to a single court; (d) legislation of the type known as the "20 year Bill"; (e) restricting applicants to dates of invention not

AGENDA OF PRESIDENT'S COMMITTEE ON PATENTS

more than one year prior to filing; (f) giving the Commissioner power to refuse a patent for laches in filing; (g) permitting allowed claims to issue while controverted claims are being disposed of; (h) ways and means of reducing the number and complexity of claims; and (1) elimination of every procedural feature contained in the statutes of Patent Office rules which creates delay except to the extent that clear need for its retention in present or modified form is shown.

PP 203. What steps should be taken to make the enforcement of a patent simpler and more effective?

Matters to be considered include: (a) abolition or modification of the strict rule regarding disclaimers; (b) a requirement that patent suits shall be tried in open court both on the merits and on the issue of recovery; (c) legislation defining the permissible scope of actionable contributory infringement; (d) legislation declaring the file wrappers to be admissible in evidence for any purpose; (e) provision of technical advisors for trial courts; (f) a requirement that trial courts shall refer issues of valid scope to the Patent Office for advisory opinion; (g) confining appeals in patent infringement cases to one court;

and (h) requiring that claims be strictly construed against the patentee,

PP 204. What steps, if any, should be taken to restore the enforceability of a patent whose owner is employing his patent to control or promote the sale of an unpatented article or material used in the practice of the invention?

Consideration should be given to the question whether provision should be made for restoring such enforceability, wholly or to the extent only of the recovery of reasonable royalty, under stated conditions which clearly remove any detriment to the public interest, as for example, conditioned upon the patent being subject to obligatory licensing or uniform and reasonable terms to anyone who does not desire to buy the patent owner's unpatented article or material.

PP 205. What has been the effect of the patent system in promoting the progress of science and useful arts and what steps can be taken to increase its effectiveness?

Consideration should be given to: (a) the manner and extent to which new business enterprises have been promoted by ownership of patents; (b) the manner and extent to which the progress of science and useful arts and the licensing of inven-

tions have been retarded by doubt as to the legality of certain types of practices employed under the patent system or by doubt as to the immunity granted by the patent laws from the operation of other laws; and (c) the extent to which technology has been maintained in secrecy without resort to patenting, as well as the steps which can be taken to induce public disclosure of technology so held in secrecy.

Sec. III

Problems relating to abuse of patents.

PP 301. What are the principal classes or types of patent abuse?

Consideration should be given to the formulation of one or more definitions which will serve as a basis for remedial enactment. To the extent that certain classes appear suitable for prohibition under criminal penalties a definition should be sought for each class which will meet constitutional requirements. To the extent that specific definitions of this kind cannot be framed consideration should be given to the framing of a catch-all definition cast in the form of a standard of conduct which is sufficiently flexible to be inclusive and workable. This problem is not directly concerned with remedies; it is primarily concerned with the definitions on which remedies may be based.

PP 302. What remedies should be created with regard to each defined class of patent abuse?

Consideration should be given to: (a) power in a court to cancel a patent which has been abused, (b) power in a court to order that a patent which has been abused shall be subject to compulsory licensing at reasonable royalty, (c) making some or all kinds of patent abuse a crime, (d) making some or all kinds of patent abuse an actionable tort at the suit of damaged parties, and (e) vesting jurisdiction to deal with some or all kinds of abuse in an administrative agency.

PP 303. What new remedies should be created where there is fraud in the obtaining, use or enforcement of a patent?

Consideration should be given to: (a) giving the Government the right to sue for cancellation of the patent; (b) giving the court in private infringement litigation the power to cancel the patent; and (c) in either case giving the court power to declare the patent subject to compulsory licensing at reasonable rates.

PP 304. What steps should be taken to free research and commerce from the restraining influence of (1) ownership of large numbers of related patents by a concern which is

AGENDA OF PRESIDENT'S COMMITTEE ON PATENTS

dominant in the line of commerce to which the patents relate, and (2) possession by a common licensing agency of the right to grant licenses under a large number of related patents owned by many different concerns?

Matters to be considered include: (a) a legislative declaration that such patents are effected with a public interest; (b) compulsory and unrestricted licensing on reasonable terms for patents affected with a public interest; (c) power in a federal court, at the suit of the Government, to require compulsory dispersal of ownership where patents affected with a public interest are owned by a concern dominant in the line of commerce to which the patents relate; (d) provisions encouraging the formation of common licensing agencies where inter-related patents are owned by many different concerns; (e) governmental supervision of such common licensing agencies; and (f) provision affording a licensee the right to divest himself in whole or in part of the obligations of royalty or estoppel when the licensed patents are affected with a public interest and expiration or cancellation of some of the patents, or changed economic conditions affecting the licensee's business,

make these obligations contrary to the public interest.

PP 305. What steps should be taken to prevent the partial or total suppression of patented inventions, other than such remedies as may be proposed in connection with par. 304 above?

Consideration of this problem should be integrated with consideration of par. 304. Study should be made of suitable definition of the conditions under which non-used inventions would be subject to compulsory licensing, for example, where the non-use is for the purpose or with the effect of preserving a competitive position in non-patented items or is inimical to the national welfare, where the patent owner's production is inadequate to supply the demand, where the desired use is non-competitive, and the like.

PP 306. Should patents covering inventions in the fields of public health and safety be made subject to compulsory licensing by reason solely of that fact?

Consideration should be given to: (a) reaching a fair balance between the public interest in stimulating invention in these fields, and the interest in assuring widespread use of such inventions; (b) specifying certain conditions, for example, in times of national emergency, when

compulsory licensing would become effective in respect to patents in these fields; and (c) what agency shall determine whether a patent is in the field of public health and safety.

PP 307. Are there any occasions for, or purpose to be served by, compulsory licensing otherwise than as set forth in the recommendations submitted in connection with paragraphs 302 to 306 above?

Matters to be considered include: (a) the manner and extent to which new business enterprises have been discouraged or inhibited by the proper or improper assertion of rights under patents owned by others; (b) whether all patents should be subject to compulsory licensing either from their date of issue or after a certain length of time; (c) whether patents of extremely broad scope should be exclusive only in certain fields and, outside of such fields, subject to either free or reasonable-royalty licensing; and (d) whether improvement patents should be subject to compulsory licensing after expiration of the basic patents.

PP. 308. By what machinery and criteria should compulsory licensing be administered in cases where it is recommended?

Consideration should be given to: (a) providing that the patent

will not support an injunctive remedy but only the recovery of reasonable compensation; (b) empowering the Commissioner of Patents or other appropriate agency of the Government to administer the terms of licensing; and (c) in either case specifying by statute the factors to be taken into account in arriving at reasonable compensation.

PP 309. What steps should be taken to remove the barriers which prevent judicial inquiry into the validity of patents collaterally relied on to support agreements or conduct?

Matters to be considered include: (a) provision that the Government shall have the right to question the validity of any patent relied on as justification for agreements or conduct challenged under the anti-trust laws; (b) whether the doctrine that a licensee is estopped to question patent validity serves a useful purpose in a sound patent system; and (c) achieving a fair balance between assuring full inquiry into situations where the public interest may be prejudiced and facilitating settlement controversy where the public interest is not involved.

PP 310. Should the Government or the Patent Office be permitted to exercise further supervision over the settlement of interferences?

Matters to be considered in-

AGENDA OF PRESIDENT'S COMMITTEE ON PATENTS

clude: (a) Government intervention as of right; (b) Government intervention as of right where there is settlement; and (c) a requirement that the terms of settlement and other data be reported to the Patent Office.

PP 311. Should legislation requiring the public filing of licenses and other agreements relating to patents specify that they should be filed with the Attorney General or in the Patent Office?

PP 312. Should penalties be provided for mis-using the notice "Patent applied for" in such a manner as to mislead the public?

Sec. IV

Reexamination of the scope of the present patent system and the rights granted under it, in the light of the constitutional objective.

PP 410. Should limitations in the national interest be imposed on patents granted to nationals of foreign countries?

Matters to be considered include: (a) denying all access to our patent laws by aliens; (b) provision that patents granted to aliens shall be effective, as to term and remedy, only to the extent of the rights reciprocally made available to Americans in the alien's country; and (c) provision that patents granted to aliens shall be subject to compulsory licensing.

PP 402. Should subject - matter

now within the scope of patent protection be removed therefrom?

Matters to be considered include: (a) medicines; (b) foods; and (c) military weapons.

PP 403. Should subject - matter not now within the scope of patent protection be included therein?

Matters to be considered include: (a) new uses of old articles; (b) laws of nature; and (c) methods of doing business.

PP 404. Should there be legislation permitting the taking of patents by eminent domain?

Matters to be considered include a definition of the circumstances involving the public interest when such action may be taken.

PP 405. What rewards for inventions might be offered other than the present 17 year grant of exclusive rights?

Consideration of this problem should be integrated with consideration of other problems raising related questions, for example paragraphs 102, 304, 305, 306, and 402 above. Additional matters to be considered include: (a) whether the 17 year term should be shortened or extended and (b) whether rewards other than a patent might be offered to inventors.

PP 406. Do the provisions of Sec. 4901 of the Revised Statutes, which provide for action by an informer,

serve a useful purpose under present conditions?

Matters to be considered include: (a) reaching a fair balance between the public interest in protecting the patent owner and the public against deception, and the public interest in having patent numbers associated with manufactured articles so that expiration of patent protection will be made known; and (b) whether the remedy of suit by informer should be maintained or a suit by the Attorney General substituted.



Metallurgical Engineering — A Field for Women

Marion Cccile Joswick, winner of the \$2,400 scholarship, first place for girls, in the Fourth Annual Science Talent Search, sponsored through Science Service, entered the Polytechnic Institute of Brooklyn this Fall, as the first girl in its history to undertake a course in metallurgical engineering.

Professor Otto H. Henry, associate professor of metallurgical engineering at Polytechnic, stated that he believed metallurgical engineering offers great possibilities for women. There is a tremendous field in the new alloys which has scarcely been touched, and women should be able to make very definite contributions as research workers in it.

Chemical Industries Exposition

The 20th Exposition of Chemical Industries is being organized for the week of February 25th to March 2nd, in Grand Central Palace, New York, N. Y., according to an announcement by Charles F. Roth, president of the International Exposition Company. Many new products and processes created during the war will be displayed, and a large portion of the display space has already been requested. Chairman of the advisory committee is M. C. Whitaker, F.A.I.C., vice-president of the American Cyanamid Company. The other committee members include C. R. Alexander; Raymond F. Bacon, F.A.I.C.; L. W. Bass, F.A.I.C.; Wallace Cohoe, F.A.I.C.; Hugh Craig; J. V. N. Dorr; Sidney D. Kirkpatrick; C. S. Marvel; Walter J. Murphy, F.A.I.C.; Robert L. Taylor, F.A.I.C.; R. Gordon Walker, E. R. Weidlein, F.A.I.C. and W. T. Read, F.A.I.C.

Calco Purchases Plant

The Calco Chemical Division of American Cyanamid Company, Bound Brook, N. J., has purchased the Gloucester City, N. J., plant of the Sherwin-Williams Company, used for experimental production of titanium dioxide. Ames Hettrick, manager of Calco's Piney River, Virginia, plant will also be manager of the new plant.

Industry's Debt to Chemical Education

Alexander Silverman, F.A.I.C.

Head of the Department of Chemistry, University of Pittsburgh.

SO much has been said about the responsibility of colleges and universities to industry that the attention of industrialists might well be called to their obligations to the colleges and universities that train their men. The writer knows of no better introduction to the subject than a quotation from an article, "Human Aspects of Scientific Research," which Dr. William A. Hamor of Mellon Institute prepared for September 7, 1945, *Science*. This follows:

"It seems that wherever research is alive it grows. The past thirty-five years have seen the number of industrial research laboratories in this country increase from a few to more than 3,000. But, without the evolution of scientific investigation in the universities, these industrial laboratories might never have been established. In addition to the very idea of research the universities have supplied the industries with men and women possessing knowledge not only of the underlying scientific facts and theories

but of the methods and techniques of investigation. From the universities also has come much of the basic knowledge of science on which modern technology has been erected and will build in the future. The practical uses of science may be regarded as the dividends declared every once in a while by pure research and research education. When such research and education are hindered these dividends must often be paid out of surplus and in a disaster such as war they may have to be taken from capital.

"During the past several years the loss of science students and teachers and the assignment of remaining scientific personnel to wartime tasks have all but stopped pure research in our universities. The situation resulting from this expenditure of basic resources is so very serious that years of zealous effort in and for our research training schools will be required to provide an adequate supply of scientists and to put

pure investigation on a perwar level. The Federal Government and our industries have been amply notified by the interested professions that pure research has waned and must be revived, that almost a generation of scientists has already been lost, that there will be a shortage of research personnel in the after-war period, and that capable science teachers and fundamental research specialists should be returned to the universities. Let us trust there shall never again be a lapse in the continuity of pure research and research education. We must retrace our impressions of them upon the ground of hope for a long peace."

Supplementing the statement by Dr. Hamor, the writer reminds industrialists that they should not only refrain from draining the colleges and universities of personnel which is necessary for the proper training of chemists, but that they should so subsidize the colleges and universities that salaries will be adequate and that training can proceed on a high level.

Cost of Chemical Training

B. S. Degree. Taking the cost of a pre World War II education in the University of Pittsburgh as an example, a candidate for the Bachelor of Science degree in Chemistry or Chemical Engineering would have attended four years at a minimal an-

nual cost of \$350 for tuition, fees and books. On this basis his education would have cost him \$1400. In addition, he would have spent at least \$50 a month for room and board, or \$2000 for each of the four college years. The University of Pittsburgh, through state appropriations and private gifts, supplemented the student's outlay by about \$1800 for the four years. Thus, a Bachelor of Science degree, combining the student's cost and the funds provided by others, required at least \$5200.

Ph. D. Degree. For a student engaged in advance study towards a Doctor of Philosophy degree, for three additional years there was an added investment of \$3900, making the grand total at least \$9100.

The University's Contribution

The student paid about forty per cent of the cost of his education. Perhaps industrialists feel that he should have paid the entire cost. This would have been prohibitive in the case of many students, and would have deprived them of an education. The other sixty per cent was provided by the state, by foundations, or by philanthropically minded individuals. As indicated in the preceding section, the amount was \$1800 per student for the Bachelor of Science degree and an additional \$1350 for the Doctor of Philosophy degree.

An institution has to provide buildings with adequately equipped labor-

INDUSTRY'S DEBT TO CHEMICAL EDUCATION

atories. A building costing half a million dollars would require five per cent for lighting, heating, and janitor service namely, \$25,000 per annum.

Buildings and Endowments

Foundations, industries, and individuals have provided funds for the construction of chemistry buildings, many of them handsome contributions. As previously stated, a building cannot be serviced and maintained for less than five per cent of the initial cost per annum. This amount is apt to increase rather than decrease in the post war period. On the foregoing basis, a million dollar gift would require at least an additional million dollars for its maintenance for twenty years. Since buildings serve much longer than that, it would seem that two dollars should be provided for maintenance in addition to every dollar that is presented for the construction of a science building. How many gifts have been provided with this supplement?

What Has Industry Contributed?

Buildings. Of chemistry buildings which have been presented during the last twenty-five years in the United States, the majority were the gifts of philanthropists who are not scientists and who were not direct beneficiaries from chemical industry. Comparatively few of the laboratories in our educational institutions have been provided by chemists, chemical engineers, or their industries.

Fellowships. Fellowship awards

rarely bring a return to the colleges and universities. Frequently, free tuition is granted to pre-doctorate students and the cost of research materials is defrayed by the educational institutions. The maintenance of buildings and laboratories is not taken into account.

While fellowships further pure research whose publication is important and a credit to the institution of learning, financially, they are in most instances an actual liability from the standpoint of partial contribution of funds by the institution. In some cases the fellowships provide money for equipment which becomes the permanent possession of the institution, but in the long run fellowships provide little for colleges and universities except the glory of publication.

Manufacturers have presented exhibits of various kinds, including models and even plant scale units. Where these are in actual operation, the university pays the cost of operating.

Industry's Obligation

An analysis of facts and figures covering the training of chemists and chemical engineers would seem to indicate that industry has an obligation, which obligation might be met:

(1) Through the presentation of buildings with adequate endowment, preferably a capital sum which would be used to maintain a building for thirty to fifty years.

(2) By presenting funds for

the creation of museums and the furnishing of these with suitable models and exhibits.

(3) By presenting funds to maintain adequate and up-to-date library service.

(4) By providing funds to insure adequate and timely equipment for advancing chemical training.

(5) By providing funds to insure the appointment of a full staff of good teachers, preferably outstanding individuals, and at adequate salaries.

(6) By providing funds to enable the teaching staff to devote a portion of the time to research, thus carrying lighter teaching loads and enjoying the stimulus which research provides.

(7) By providing funds for sabbatical leave for members of teaching groups so that they may extend their horizons through contacts with industrial and research institutions.

(8) By providing funds to finance paid exchange lectureships.

(9) By granting permission to specialists from industry to deliver lectures on special topics to the students.

(10) By lending or transferring exceptional scientists from industry to educational institutions instead of removing the cream of their teaching personnel.

(11) By presenting funds to provide honors or awards to students for exceptional accomplishment.

(12) By providing funds for scholarships and fellowships to attract capable students.

(13) By facilitating plant visits to enable students to realize the relationship of their training to industry.

(14) By insisting on the teaching of sound fundamentals and the leaving of the training of practical men to industry itself.

Industry's Options

Failing to support chemical education by the fourteen methods indicated, a manufacturer could still compensate the educational institution by paying a certain sum outright for every chemist or chemical engineer he gets with a Bachelor of Science degree, and a somewhat larger sum for each Master of Science degree, and a still larger one for each Ph. D. provided by the institution. This would not be paying a commission to an employment agency but would provide funds to help train the men that industry needs. The estimate for Bachelors might be \$2,000 per man, for Masters \$2,500, and for Doctors of Philosophy \$3,500.

Conclusions

1. Industrialists have a greater obligation to the graduates of colleges and universities than has been met by mere salaries even during war time.

2. Industrialists should pay the cost of training chemists and chemical engineers which is now borne by

INDUSTRY'S DEBT TO CHEMICAL EDUCATION

others—foundations, philanthropists, taxpayers.

3. Industrialists should provide adequately equipped buildings with funds for their maintenance, and for the employment of competent teaching groups.

4. Industrialists should provide self-supporting scholarships and fellowships for the training of exceptional students, and for research in pure science.

Industry has benefited richly through the application of chemical science. This is not an assumption. It is a well-established fact. Industry's prospects and returns will increase in proportion to industry's support of education.



The Chemical Industry an Integral Part of the Economic Fabric of our Nation

Dr. Willard H. Dow, F. A. I. C., president of the Dow Chemical Company, in the 48th Annual Report to the stockholders and to the public, significantly concluded with the following statement:

"There is scarcely a single enterprise in the country in which chemistry does not today play an important part. For this reason there is cause to reflect on how the application of chemistry can best serve the well-being of our nation.

"Less than four years ago the American people were given a lesson which they should never forget. It is simply that to the extent that any nation lacks self-sufficiency in basic raw and industrial materials, to that extent is she vulnerable to attack in time of war.

"Rubber, of course, is the outstanding example of this principle. Our dependence upon foreign sources of raw rubber hampered our ability to wage war and disrupted to no small degree our civilian life. Only the rapid development of an entirely new industry — the synthetic rubber industry—saved this country from a military and industrial impotency that might have prolonged the war by years.

"We as a nation, are today more self sufficient than at any time in our history. The accomplishments of the last few years are proof in themselves of the diversification which is possible through the science of chemistry. We have seen that through it nearly all the needs of man can be supplied from only a handful of basic resources, such as coal, petroleum, sea water, and air. We have learned that through chemistry merely a few basic resources can be converted into a vast number of industrial materials and that agricultural products as raw materials for chemistry have only just crossed the threshold into the realm of their potential possibilities. We should

make it our job to preserve and protect this independence we have gained, for only in this way can we do our part most efficiently in helping to maintain peace and to provide employment for our people. We are only beginning to realize the opportunities which chemistry and science are opening up to us for raising our standards of living and abolishing disease. During the war many billions of dollars worth of industrial facilities and equipment have been constructed, much of which, if we have a healthy market here at home, can be put to work in meeting the demands for new products and new materials.

"It would be folly, indeed, if after the war we should surrender our economic independence and place obstacles in the way of producing materials and goods domestically in order to build up an artificial system for world trade. The nation would be grievously ill-advised if it entered into any grandiose schemes to foster world trade at the expense of our own economic and military security. The best way to provide jobs is to produce here at home as great a portion of our needs as possible. Let us not, therefore, try to turn backward the wheels of our scientific progress, but let us move forward through chemistry toward a broader economic system which will provide maximum opportunity for the people of our country."

Thomas with Great Lakes Carbon Corporation



The Great Lakes Carbon Corporation, Morton Grove, Illinois, announces the appointment of Dr. Charles L. Thomas, F.A.I.C., as director of research, and Dr. L. Swallen as assistant director of research.

Dr. Thomas recently joined the research staff of Great Lakes Carbon Corporation after fourteen years in the research and Development Laboratories of the Universal Oil Products Company. Dr. Swallen came to the corporation three years ago. Previously he was with the Corn Products Refining Company.

Chain, Karat, and Stone

Maximilian Toch, Hon. A.I.C.

THE title of this article is not facetious, but represents some of the dozens of different titles given to our weights and measures. In the rural districts and in Canada the chain is still used as a measure of land. One chain is approximately sixty-six feet.

The karat has been for many years the unit of weight of diamonds and other precious stones. When fractions of a karat were wanted they were expressed in quarters or eighths, down to sixty-fourths.

If you asked an English farmer how much he weighed, he would answer fourteen stone three, which meant one hundred and ninety-nine pounds, because a stone in England is supposed to average fourteen pounds, and no change has taken place in the method of weight in the rural districts, so far as I know, to date.

I could give dozens of examples of the archaic and stupid nomenclature that we still use to express weights and measures. How simple it would all be, if the only two countries that still have these archaic units of meas-

ure, England and the United States, would get together and adopt the metric system for everything.

If you want to take off an afternoon and practice indoor sports, try taking $2\frac{3}{4}$ per cent from L-176s-14 d-4 $\frac{1}{2}$, but if you want to take $2\frac{3}{4}$ per cent from \$100.00 you do not have to use a slide rule and a book of logarithms to arrive at the result.

In Biblical times the decimal system was used. Ten fingers and ten toes were the maximum amount that could be counted by itself and this was called a score, and the expression still exists in the Bible that the maximum of a man's years was three score and ten.

Centuries ago, Great Britain found the necessity of establishing some unit of measure as to weight and length. Three barleycorns were accepted as the standard of an inch. Thirty-six barleycorns was the average size of a man's foot, so the measure of a human foot was thereafter called a foot and represented thirty-six barleycorns or twelve inches.

Alexander Hamilton and Benjamin Franklin had evidently been fed

up on the English monetary system and determined to introduce the decimal system, and that was how dollars and cents originated. Everything was on the basis of 100, and one per cent of 100 was called for short one cent, which meant one per cent.

About 1910, Dr. George Kunz, one of the foremost mineralogists of his time and the vice-president of Tiffany & Company, called a meeting at The Chemists' Club, at which about a dozen members were present. They formed "The Metric Society of America." The following year after having organized properly, a national meeting was called in Washington at which about seventy scientists attended. It was agreed that every member would call on the Congressman and Senator of his State to see whether this government would not adopt the metric system for the United States. There was a definite feeling that if we did so, England would have to follow. All the other countries in the world have a metric system and a decimal system of money with the exception of England,

The outbreak of the first World War hampered our progress, and not having made very much headway, the Society disbanded in 1920. Some good came of it, however. One was that our own government accepted the metric system of weights and measures in imports, and that the lapidaries finally consented, that, inasmuch as the karat weighed approximately 200

mg. the karat would hereafter have a unit of weight of 200 mg. the world over.

Chemists both in England and in the United States use the metric system, and the formulas for photographic developers are generally expressed both in avoirdupois and in metric. One great drawback which most industrial chemists find is that when a laboratory arrives at a formula, it must be translated into avoirdupois because the workman is not familiar with the metric system.

There is not enough stress paid to the teaching of the metric system in public schools, for most children are taught it in the very low grades when weights and measures are first taught to them, and when they get into High School they have forgotten all about it.

My belief is that, now this war is over, not one scientific society, but all of them in the United States should get together in order to see what can be done. If the engineers, the chemists, and the pharmacists use enough pressure and have a sufficient number of votes behind them, I feel sure that political bodies would do something toward legislation which would be effective.

All of this comes under the head of "Now you've got something to think about".

There are still old-fashioned unintelligible methods of determining the specific gravity of liquids, such as

CHAIN, KARAT, AND STONE

Beaume and Twaddle, but fortunately the chemical industry relies on the more reliable method of taking the specific gravity of water at 15.5° as 1000. If a sample of oil has a specific gravity of .934 you know that it is approximately correct, and that it may be linseed oil.

Temperatures in America and in England are still measured by the Fahrenheit thermometer in which freezing water is marked at 32° and boiling water at 212°. If there is anything more archaic than this, I do not know it.

Over two hundred years ago, the centigrade thermometer came into use with freezing water at zero and boiling water at 100. I am well aware of the argument which some make that the difference between 32 and 212 is a greater sub-division than between zero and 100, but there is no reason why those who believe in this greater sub-division cannot have a thermometer made in which the degrees are sub-divided into two or four points.

It is going to take a long time before the United States and England will ever adopt the metric system and all kinds of excuses will be found to delay it as long as possible. Let us hope, therefore, that the chemist and manufacturer will get together and see that Congress adopts the metric system for the United States, and then England will have to follow.

Research Corporation Offers Grants for Research

Scientists who did research on vital war weapons will have a chance to return to college laboratories for scientific research and teaching, through \$2,500,000 in grants offered to educational institutions by Research Corporation, 405 Lexington Avenue, New York, N. Y., a non-profit organization devoted to advancing research by use of revenues from inventions assigned to it.

These special grants will be made to educational institutions in sums of \$2500 to \$5000 for an academic year, over a five-year period, to support research in chemistry, physics, mathematics, and engineering. Preference will be given, other factors being equal, to smaller institutions and to those of more limited financial resources for research. Information and inquiries should be addressed to Dr. Joseph W. Barker, acting president of the Research Corporation.

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September Meeting

THE 222nd meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held on Wednesday, September 19, 1945, at 6:30 p.m. at the Building Trades Employers' Association Club Rooms, No. 2 Park Avenue, New York, N. Y., with President Gustav Egloff presiding.

The following officers and coun-

cilors were present: Messrs. S. R. Brinkley, G. Egloff, F. A. Hessel, R. E. Kirk, J. M. McIlvain, R. J. Moore, J. F. Muller, H. S. Neiman, D. Price, M. Toch, and J. R. Withrow.

Mr. Arthur Schroder, Mr. T. S. McCarthy, and Miss V. F. Kimball were present.

The minutes of the preceding meeting were approved.

The report of the Secretary on membership was accepted.

The secretary read a letter which asked if it were permissible to use the emblem of THE AMERICAN INSTITUTE OF CHEMISTS on personal and business stationery. On motion made and seconded, it was agreed that it is not desirable to have the emblem used on personal and business stationery of individual members, but that the initials "F.A.I.C." or "M.A.I.C.", which designate membership in the INSTITUTE, should be used instead.

The Treasurer's report was presented and accepted.

Dr. Withrow, as new Councilor, was introduced to the assembled meeting.

The Treasurer introduced a motion to the effect that each Chapter be given a loan of \$50.00 to be applied against fifty per cent of the first year's dues of each new member brought in by the Chapter. Thus if a Chapter brings in ten Fellows, the fifty per cent rebate of their dues to the Chapter would be \$50.00, and the loan would be liquidated. Should a Chapter bring in more than the number of new members required to cancel the \$50.00 loan, the Chapters would be given additional funds equal to fifty per cent of the first year's dues from such additional members. Upon being seconded, this motion was adopted.

Mr. Neiman reported that two

letters concerning the salaries of municipal chemists had been referred to the Committee on Economic Welfare.

Dr. Hamlin reported that the Committee on Employer-Employee Relationships would like reprints of that Committee's Report. He was requested by the President to work out a specific recommendation, with the assistance of the executive director, as to the numbers to be distributed, to whom, and other pertinent information, for presentation at the next meeting of the National Council.

Dr. Price reported as chairman of the committee on membership. It was suggested that 500 new members be brought in by the end of the year. Dr. Egloff offered to write a letter to INSTITUTE members asking for names of those who are qualified for membership. After discussion, it was suggested that the cooperation of key members in regional areas be requested to assist in bringing in new members.

The resignation of Howard S. Neiman as Secretary of the INSTITUTE was presented to the Council.

It was moved that Mr. Neiman's resignation as secretary be accepted and that he be elected by the Council as Honorary Secretary of the INSTITUTE. Motion carried.

It was then moved to amend that part of the motion accepting the secretary's resignation to read: "Upon motion made and seconded, the res-

COUNCIL

ignation of the Secretary is accepted as of the date of the next meeting of the National Council".

The president then appointed the following Committee to select a secretary, and fill out Mr. Neiman's unexpired term: Dr. Robert J. Moore, Dr. Donald Price, Dr. R. E. Kirk.

Mr. Schroder reported that 1200 returns had been received from the data sheet sent to members for the roster, and that it probably would be published around the first of the year.

Dr. Withrow suggested that we look into the education work being done in Europe by the Army's Education Program, which is being given to some 30,000 Americans there. These men might very well be interested in the INSTITUTE's program of professional activities. Dr. Russell of the University of Chicago is the head of the Army education center in Paris. Dr. Egloff stated that a possible recommendation to the Council for action could be worked out of this.

Mr. Schroder stated that progress in advertising is being made on THE CHEMIST, and that several new accounts are expected after the first of the year.

Upon motion made and seconded, the following applications for membership were accepted.

Fellows

Allender, Samuel Shelton

Chemical Engineer, The Harshaw Chemical Company, 1945 E. 97th St., Cleveland 6, Ohio.

Armshaw, James William

Research Chemist, International Lubricant Corporation, Southport, La.

Babcock, Earl Byron

Director of Chemical Laboratories, Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron 17, Ohio.

Birks, Robert Kyffin

Production Chemist, National Aluminate Corp., 6216 W. 66th Place, Chicago, Ill.

Connitt, G. Herbert

Research Chemist, Smith Kline & French Laboratories, Philadelphia 23, Penn.

Deebel, George Franklin

Research Chemist, Monsanto Chemical Co., Dayton, Ohio.

Ells, Victor Raymond

Physical Chemist, Norwich Pharmacal Co., Norwich, N. Y.

Fox, Sereck Hall

Technical Director, Gelatin Products Corporation, 9425 Grinnell Avenue, Detroit 19, Mich.

Gluesenkamp, Earl W.

Assistant Director of Research, Monsanto Chemical Co., Research Department, Dayton, Ohio.

Gutfarb, George

Director of Research and Development, National Tile and Marble Company, 529 W. 46th St., N. Y. 19, N. Y.

Hetchler, John D.

Technical Service Engineering, Werner G. Smith Co. (Div. of A.D.M.), 233 Broadway, N. Y. 7, N. Y.

Homeyer, Henry N., Jr.

Chemical Engineer, Bauer & Black,
2500 S. Dearborn St., Chicago, Ill.

Imhoff, Carroll E.

Chemical Engineer, Allis-Chalmers
Mfg. Company, Milwaukee 1, Wis.

Jones, Blanche P., Jr.

Research Chemist (partner) Hizone
Products, Wilmette, Ill.

Sussman, Sidney

Chief Chemist, The Permutit Co.,
Birmingham, N. J.

Members

Hollander, Harry B.

Factory Chemist, A Hollander & Son,
Inc., 143 E. Kinney St., Newark, N. J.

Reichardt, Paul E.

Chief Chemist, Washington Gas Light
Company, 1100 H St., NW., Wash-
ington 1, D. C.

Associates

Seaman, Robert Vincent

Director of Research and Development,
Heckethorn Manufacturing and Supply
Co., Littleton, Col.

Stottler, Helen

Analyst, Barrett Division, A. C. & D.
Corporation, Philadelphia, Penn.

Raised from Associate to Fellow**Russell, Charles D.**

Research Chemist, California Milk
Products Company, Gustine, Calif.

Raised from Member to Fellow**Abbott, Ruth**

Research Chemist, Calco Chemical Di-
vision, American Cyanamid Co., Bound
Brook, N. J.

Blann, William A.

Consulting Chemist, Chemical Construc-
tion Corporation, 30 Rockefeller Plaza,
N. Y. 20, N. Y.

Reinstated to Fellow Membership**Clough, Lyle A.**

6116 43rd Ave., Hyattsville, Md.

Corey, Richard Clarke

Research Chemist, Combustion Engin-
eering Co., Inc., 200 Madison Ave.,
N. Y. C.

Jackson, Kirby Erroll

Chemist, West Virginia Pulp and
Paper Co., Experimental Plant, Cov-
ington, Virginia.

There being no further business,
adjournment was taken.

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Vice-chairman, Rev. E. S. Hauber, S. J.

Secretary-treasurer, J. G. Erdman

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Baltimore 14, Maryland

Council Representative, Maurice Siegel

Alternate, J. F. Muller

News Reporter to THE CHEMIST, Ralph Lamenzo

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1771 Springfield Street, Dayton 3, Ohio

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THE first fall meeting of Chapter was held on September 20th at the Engineers Club.

Dr. George F. Deeble of the Monsanto Corporation discussed "The Chemist in a Changing World". This was presented in an extremely interesting fashion. During Dr. Deeble's talk the Vannevar Bush Plan was presented in detail. In this, the findings of Dr. Bush were discussed at

length as to the effect the world war had on the recognition of the scientist in general and the chemist in particular.

Dr. Deeble pointed out that there is a deficit of highly trained chemists in the United States due to the failure of our selective service system to make provisions for the youth of America to attend colleges and be trained in the fields so badly under-

manned. Dr. Deeble's statements were borne out with statistical records obtained from colleges and universities throughout the United States.

Dr. Deeble entered a plan for the training of chemists and for the enactment of a state registration law for chemists.

The chemist himself, in Ohio, is promoting a state registration act for chemists, which will not only

strengthen the position of the profession, but also provide a guarantee to the public on the competence and responsibility of the people practicing the chemical profession.

A short business meeting preceded Dr. Deeble's talk. Mr. O. W. Berglund, Mr. William Neil and Mr. A. C. Goetz were appointed to the nominating committee.

Washington

President, Louis N. Markwood

Vice-president, William L. Hill

Secretary-treasurer, Royal E. Rostenbach

319 North Quincy Street, Apt. 1

Arlington, Virginia

Council Representative, Walter J. Murphy

Reporter to THE CHEMIST, H. I. Feinstein

A dinner-meeting of the Chapter was held October fourth at the Wardman Park Hotel with Dr. L. N. Markwood presiding.

Mr. Arthur Schroder, Executive Director of the INSTITUTE, was guest speaker of the evening. He outlined in some detail what the INSTITUTE has been doing recently for the chemist. Whole-hearted cooperation has been achieved between the INSTITUTE and many groups, agencies, societies, and organizations throughout the country whose problems and objectives are similar to our own. Committees are being formed or have been formed to survey among other things: Patents, Legislation, Civil

Service, Employee-Employer Relations and Membership. Much information is being collected and studied relative to licensing legislation. There is activity for the formation of new chapters, especially in New Jersey, and possibly Massachusetts, and Connecticut.

Mr. J. N. Taylor, a charter and life member of the INSTITUTE, retired from the Government service August 31, 1945. At the time of his retirement, Mr. Taylor was acting chief of the Chemical Unit, Bureau of Foreign and Domestic Commerce. After a short rest, he will be located in his home town of Smyrna, Delaware.

Service To Institute Members

The columns of THE CHEMIST are available without charge to all members of THE AMERICAN INSTITUTE OF CHEMISTS who are either seeking chemists or looking for new positions.

Positions Available

Bio-chemist to head Department of Chemistry, Board of Health of mid-west city. Doctorate degree, well-grounded field of experience, particularly food, drugs, and toxicology; initiative and good personality. Starting salary \$3600. Ex-service men especially considered. Please reply to Box 111, THE CHEMIST.

Chemists Available

Industrial Chemical Engineer. F.A.I.C. Age 31. Married. B.S. in chemistry. M.S. in education. Experience for past three years as chemist and engineer for Chemical Warfare Service. Previous experience in sales service of batching and testing equipment, with electrical control and recording devices. Previous work as research and development assistant. Have broad experience in materials production, quality control, and development programs. Please reply to Box 110, THE CHEMIST.



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Baker Chemical Promotes

G. B. Hafer, general sales manager of the J. T. Baker Chemical Company, Phillipsburg, New Jersey, announces that Harold W. Feuchter will be in charge of merchandising and distribution of laboratory chemicals as division sales manager. Warren F. Schumacher is now manager of the New York office of Baker. Fisher Gaffin will take over the sales territory of the Baker Company in New Jersey.

Important REINHOLD Books

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A series of lectures sponsored by Wayne University under the direction of Neil E. Gordon, Chairman, Department of Chemistry.

Edited by SUMNER B. TWISS, *Dept. of Chemistry, Wayne University*

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BIOCHEMISTRY OF THE FATTY ACIDS and their Compounds the Lipids

By W. R. BLOOR, *Professor of Biochemistry and Pharmacology, the University of Rochester, Rochester, N. Y.*

A much-needed study of the fats—the organic compounds so closely associated in the human body with carbohydrates and proteins—of greatest value to physicians, nutritionists, organic chemists, biochemists, and to those in the food and pharmaceutical fields. Discusses the part played by fats and lipids in digestion and nutrition, and the relation of fatty acid metabolism to such pertinent subjects as vitamins, enzymes, the reproductive cycle, embolism, anaemia, cancer, diabetes, syphilis, arthritis and others.

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The PHYSICAL CHEMISTRY of ELECTROLYTIC SOLUTIONS

By HERBERT S. HARNED, *Professor of Chemistry, Yale University*
and BENTON B. OWEN, *Associate Professor of Chemistry, Yale University*

The theory and properties of strong and weak electrolytes are authoritatively dealt with in this comprehensive volume. It includes the treatment of all the thermodynamic properties of ionic solutions, as well as conductance, frequency and field effects, viscosity, and diffusion. Of great value to investigators and students in any field which involves ions in solution, this treatise reduces theoretical equations to simplest forms and supplies tables to aid in practical computations.

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By W. SWIETOSLAWSKI, *Senior Fellow, Mellon Institute*

This notable treatise by the leading authority on the subject presents new techniques for the physicochemical examination of pure liquids and their mixtures. The procedures set forth are based on precise simultaneous measurements of the boiling and condensation temperatures of liquids, and different applications in physics, physical chemistry, organic and analytical chemistry are described. A chapter is also devoted to critical phenomena. The use of the method of comparative measurements has increased considerably the accuracy of measurements made with ebulliometers and distilling columns.

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Frary Awarded Perkin Medal

Francis C. Frary, director of research of the Aluminum Company of America, has been elected to receive the Perkin Medal of the American Section of the Society of Chemical Industry, in recognition of his outstanding accomplishments in the field of industrial research. The medal will be presented at a dinner meeting of the society at the Hotel Commodore, New York, N. Y. on the evening of January eleventh.

Dr. Frary was born in Minneapolis in 1884. He received the Ph.D. degree from the University of Minnesota in 1912, and prior to that time spent a year at the University of Berlin. He joined the staff of

Oldbury Electrochemical Company in 1915, as research chemist. Here he developed the technique of producing phosgene, and during World War I, with Professor D. T. Demorst, built and operated a phosgene plant at Edgewood Arsenal, where he was major in the Chemical Warfare Service.

In 1918, he became director of research for the Aluminum Company of America. Of his many achievements, some of the outstanding include the production of very pure aluminum by electrolytic refining; the production of pure alumina by electrothermal processes, and other metallurgical processes. He holds some thirty U. S. patents, and is author and co-author of numerous books and articles in the fields of metallurgical and chemical research.

**Research Program for India**

The Industrial Research Planning Committee of India recommends the erection of nine specialized laboratories for industrial and scientific research in India. The program includes a technological institute on the lines of the Massachusetts Institute of Technology, and a \$6,000,000 grant to the scientific departments of India's eighteen universities for the training of seven-hundred research workers during the next five years.

Ralph L. Evans Associates Add to Staff

Ralph L. Evans Associates, 250 E. 43rd Street, New York, N. Y., announce the following additions to the staff:

Erie J. Hewitt, F.A.I.C., formerly director of research for Rare Chemicals, Inc., Flemington, New Jersey. Dr. Hewitt specializes in biochemistry, with experience in research at the College of Physicians and Surgeons; as an instructor at Hunter College, and as chief biochemist with National Oil Products, Harrison, New Jersey.

Charles P. Shillaber, consultant in industrial microscopy, and author of *Photomicrography in Theory and Practice*.

Florence E. Wall, F.A.I.C., recently technical editor for the Central Research Laboratory of General Aniline and Film Corporation, Easton, Penna. Her earlier experience was in teaching and chemical industry, and as a consultant specializing in cosmetics and cosmetology. Author of books and articles, and an authority on technical writing, Miss Wall will serve as technical editor in charge of information and publications.



The Vulcanized Rubber Company, 261 Fifth Avenue, New York 16, N. Y., announces the change of its name to Vulcanized Rubber and Plastics Company.

Goodrich Introduces New Synthetic Tire

John L. Collyer, president, recently announced that the B. F. Goodrich Company has developed an all-synthetic rubber tire which, tests show, will outwear the pre-war natural rubber tire. Five years ago, Goodrich introduced a passenger-car tire, made with over fifty per cent of "Ameripol", Goodrich's synthetic rubber. The future of synthetic rubber, Mr. Collyer stated, will depend on cost comparisons with natural rubber, and on the advantages of synthetic rubber over natural for specific uses. For special purposes, synthetic "hand-tailored" rubber now has definite advantages. Chemists are continuing research on the synthetics and may in the future scale down even further, or eliminate, certain quality advantages which now belong to natural rubber.

**Franklin Institute Develops Improved Cholera Vaccine**

The Biochemical Research Foundation of the Franklin Institute, Newark, Delaware, has developed a single-dose cholera vaccine. The vaccine is the result of five years of research under the direction of Dr. Ellice McDonald. Dr. Robert A. Jennings and Dr. Richard W. Linton were in charge of the development. The immunization period of the vaccine is estimated at nine months to a year.

New Process for Utilizing Sawdust



Dr. Othmer demonstrates the mixing of a chemical made from wood into a pan of sawdust, which is then put into a mold and squeezed in an hydraulic press to produce the new wall-board.

In a joint announcement by Donald F. Othmer, F.A.I.C., head of the Department of Chemical Engineering at the Polytechnic Institute of Brooklyn, N. Y., and Warren R. Smith, research engineer of Crown Point, New York, a new chemical process for the production of hard wallboard from sawdust and other wood waste was announced. With the new process, Dr. Othmer stated, 2,000 square feet of first quality, strong, water-resistant wallboard may be obtained from one ton of sawdust.

Rosin to Receive Remington Medal

Joseph Rosin, F.A.I.C., vice-president of Merck and Company, Rahway, New Jersey, has been awarded the Remington Medal of the American Chemical Society. He was listed in the citation as "the foremost chemical authority on chemical reagents."

Society of Chemical Industry Elects New Officers

The American Section of the Society of Chemical Industry announces the election of Francis J. Curtis, F. A. I. C., vice president of Monsanto Chemical Company, as chairman, and Sidney D. Kirkpatrick, editor of *Chemical & Metallurgical Engineering*, as vice chairman, to serve until July, 1946. Cyril S. Kimball, F. A. I. C., and J. W. H. Randall, F. A. I. C., were reelected honorary secretary and treasurer, respectively. New members of the Executive Committee are: W. J. Baeza, F.A.I.C., G. J. Esselen, F.A.I.C., C. N. Frey, F.A.I.C., R. Heggie, and N. A. Shepard, F.A.I.C.



Phoenix Chemical Laboratory, Inc., Chicago, Ill., announces that it is now prepared to serve the public in solving fuel and lubricant problems with the same efficiency with which it handled technical problems for war-work.

A.S.T.M. Elects Officers

At the recent annual meeting of the American Society for Testing Materials, held in New York, N. Y., the following new officers were elected: President, J. R. Townsend, materials engineer, Bell Telephone Laboratories, New York; vice president, T. A. Boyd, head fuel department, Research Laboratories Division of General Motors Corporation, Detroit; executive committee: John R. Freeman, Jr., technical manager, American Brass Company, Waterbury, Conn.; L. J. Markwardt, assistant director, U. S. Forest Products Laboratory, Madison, Wis.; Carlton H. Rose, F.A.I.C., chemist, National Lead Company, Brooklyn, N. Y.; L. P. Spalding, chief research engineer, North American Aviation, Inc., Inglewood, Calif., and William A. Zinzow, chief physicist, Bakelite Corporation, Bloomfield, New Jersey.

The Mexican American Conference on Industrial Research, sponsored by the Armour Research Foundation of the Illinois Institute of Technology, was held at the Stevens Hotel, Chicago, October first to sixth. Dr. Gustav Egloff, who served on its technical advisory Committee, made a special announcement to the conference covering the development by Universal Oil Products Company of a new catalytic cracking unit of compact design, which can be installed at low cost, and will bring the latest refining technique within the reach of small refiners.

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According to U. S. patent No. 2,351,614, meat may be tenderized by injecting 0.02 mg. to 1.0 mg. of adrenaline per kilogram of body weight into the living animal a few hours before slaughter. It is claimed that this depletes tissue glycogen and reduces acidity.



Weedless tobacco plant beds are achieved by treating the soil with granular *Aero* cyanamid about 90 days before seeding time. The initial decomposition affords disinfection of the soil whereas subsequent decomposition supplies nutrients for the plant.



According to Dr. C. M. A. Stine, "Already our world of 1940, in which we took such pardonable if mistaken pride, is so distant in the past that it has become antiquity, as seen through scientific eyes."



A synthetic resin plant is to be built in Seattle, Washington, by the Reichhold Chemicals, Inc.



The production of synthetic rubber for 1944 in the United States totaled 737,000 tons.

The post-war stove probably will be smokeless as the result of a new design which will utilize every bit of coal and gas that goes into it.



It is estimated that nylon will be available in sufficient quantity in the post-war period to produce 450 million pairs of stockings annually.



T. W. Atkins, executive vice president of the Magnesium Association, predicts that the development of alloys and structural uses portend a peace time utilization of magnesium that will influence the national economy and living standards.



Dr. L. P. Kyrides, who has ninety-seven patents to his credit, is reported to have said recently: "There's a lot of work to be done, a lot of problems that are unsolved. Sometimes I feel that, even past sixty, my career is just getting off to a good start."



The Poet, according to Gilbert K. Chesterton, is content to walk along with his head in the heavens, while the Scientist must ever seek in vain to cram the heavens in his head!

Ora Blanche Burright, A.B., M.S., M.A.**CONSULTING NUTRITIONIST**

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Meeting Dates

Nov. 6. Pennsylvania Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Engineers' Club. Philadelphia. **Speaker:** Dr. Joseph Mattiello, technical director, Hilo Varnish Corporation, "Protective Organic Coatings."

Nov. 30. Chicago Chapter, THE AMERICAN INSTITUTE OF CHEMISTS. Huyler's Restaurant, 310 South Michigan Avenue, Chicago. Dinner 6 p.m. followed by meeting.

Dec. 4. Pennsylvania Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Engineers' Club. Philadelphia. **Speaker:** Walter J. Baeza, consultant, Industrial Research Company. "Powder Metallurgy".

Feb. 5. Pennsylvania Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Engineers' Club. Philadelphia. **Speaker:** Commander Aubry H. Hamilton, USN, "Control of Tropical Diseases."

Feb. 10. Chicago Chapter, THE AMERICAN INSTITUTE OF CHEMISTS. Huyler's Restaurant, 310

South Michigan Avenue, Chicago. Dinner 6 p.m. followed by meeting.

Mar. 5. Pennsylvania Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Engineers' Club. Philadelphia. **Speaker:** Dr. Gerald P. Wendt, science editor, *Life* and *Time* magazines, "World Wide Chemistry".

Mar. 30. Chicago Chapter, THE AMERICAN INSTITUTE OF CHEMISTS. Huyler's Restaurant, 310 South Michigan Avenue, Chicago. Dinner 6 p.m. followed by meeting.

Apr. 2. Pennsylvania Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Engineers' Club. Philadelphia. **Speaker:** Walter J. Murphy, editor, *Industrial and Engineering Chemistry*. "The Chemist as Demobilized from the Armed Forces."

May (date to be announced) Plant trip.

June 1. Chicago Chapter, THE AMERICAN INSTITUTE OF CHEMISTS. Huyler's Restaurant, 310 South Michigan Avenue, Chicago. Dinner 6 p.m. followed by meeting.

Oil Chemists Schedule Meeting

The American Oil Chemists' Society, Chicago, Illinois, will hold its 19th Fall meeting, November 7-9, at the Hotel LaSalle, Chicago. Robert R. King, of Interstate Cotton Oil Refining Company, Sherman, Texas is president. George A. Crapple of Wilson and Company is convention chairman, and W. B. Hendrey, F.A.I.C. of the Edwal Laboratories, Chicago, is program chairman.

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ADVERTISING INDEX

H. Reeve Angel and Company	652
Baker and Adamson	Outside back cover
J. T. Baker Chemical Company	601
Central Scientific Company	607
Corning Glass Works	Inside front cover
Croll-Reynolds Company	604
Edwal Laboratories, Inc.	651
Eimer and Amend	606
Fisher Scientific Company	606
D. W. Haering and Company	609
W. C. Hardesty Company	611
Industrial Machinery Company	643
Kewaunee Manufacturing Company	605
N. I. Malmstrom & Company	610
Merck and Company	608
Metalsalts Corporation	648
Professional Services	635-636-650
Reinhold Publishing Corporation	644
Texaco Development Corporation	612
Arthur H. Thomas Company	Inside back cover
Wilkens-Anderson Company	602

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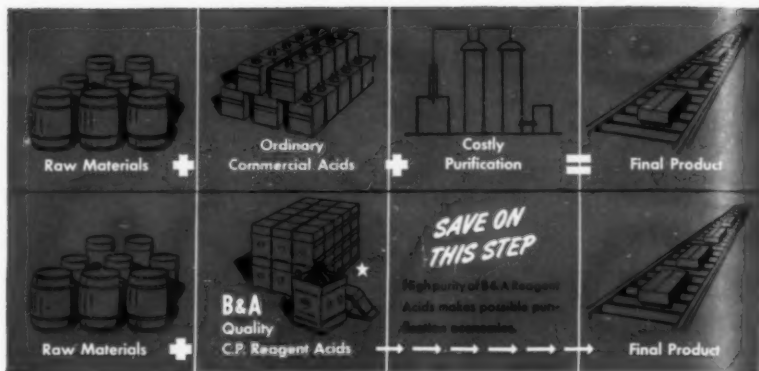
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